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(54) A Device for selectively generating perfume gas

(57) A device for selectively generating perfume gas, including a main body having an interior space which receives a container base having an internal space for receiving perfume containers, a selecting system able to reciprocating within the interior space of the main body, a heating system for providing heat according to the movement of the selecting system, a blast member and motors for supplying power to the blast member. The selecting system selectively exerts a force on a cap member to release a hole of the internal space from sealing and selectively activates the heating system to form a high temperature area above a predetermined surface of a wick member of said perfume container, whereby different kinds of perfume gases are freely selectively and changeably generated and released to external environment.

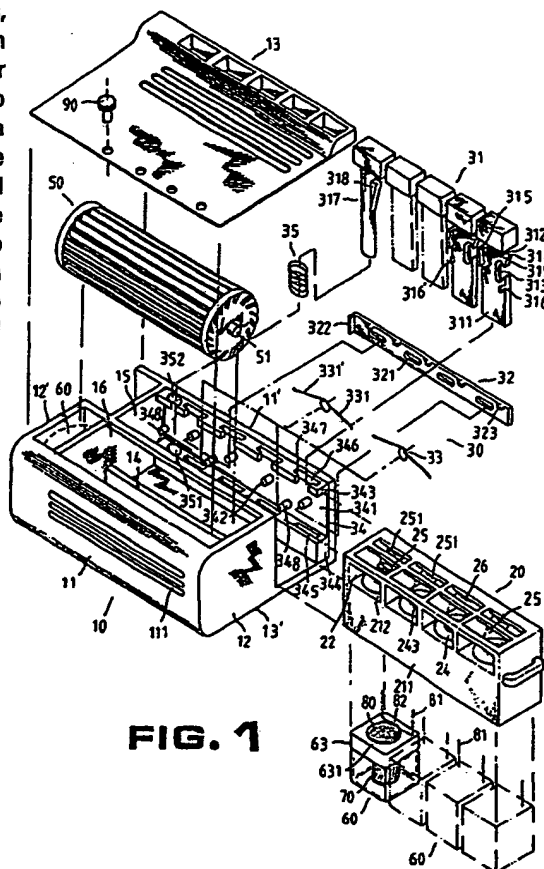
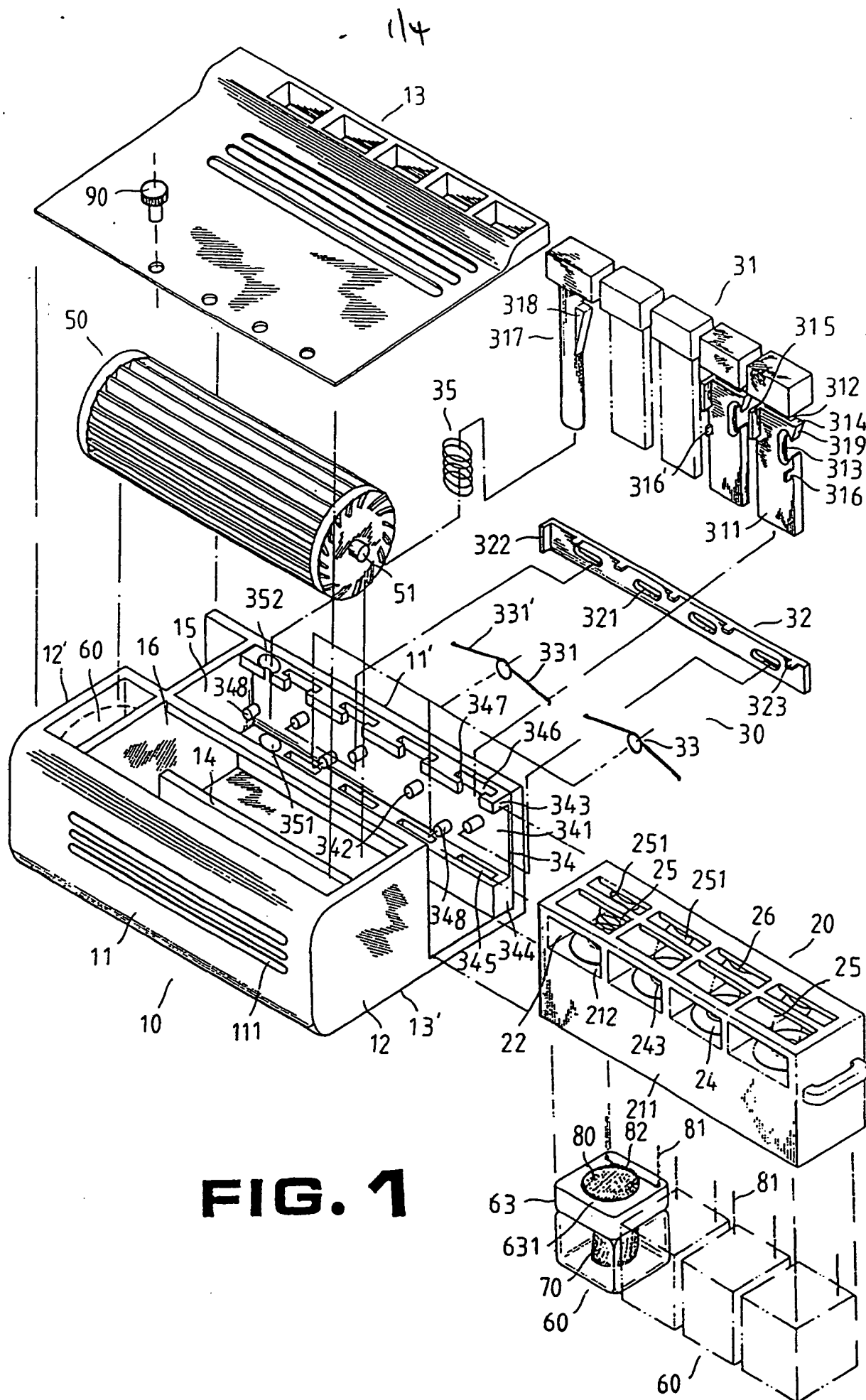


FIG. 1

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**FIG. 1**

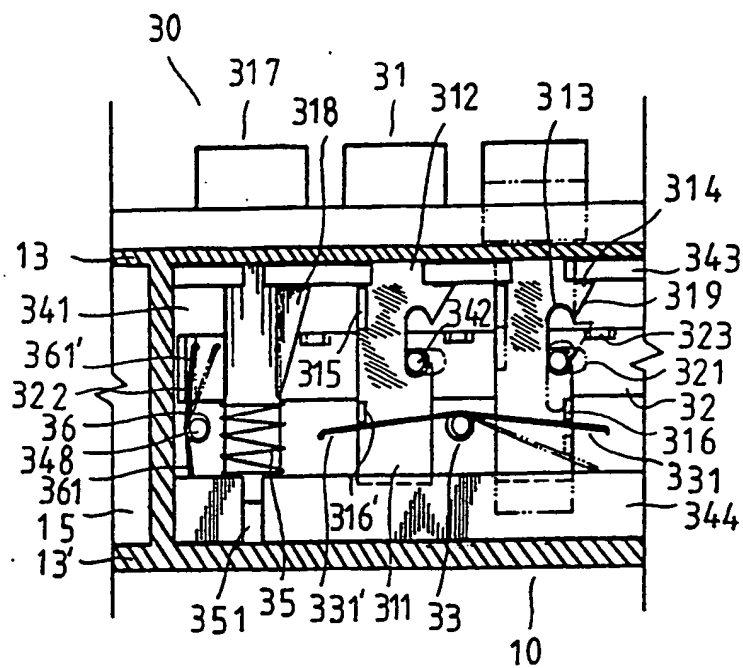


FIG. 2

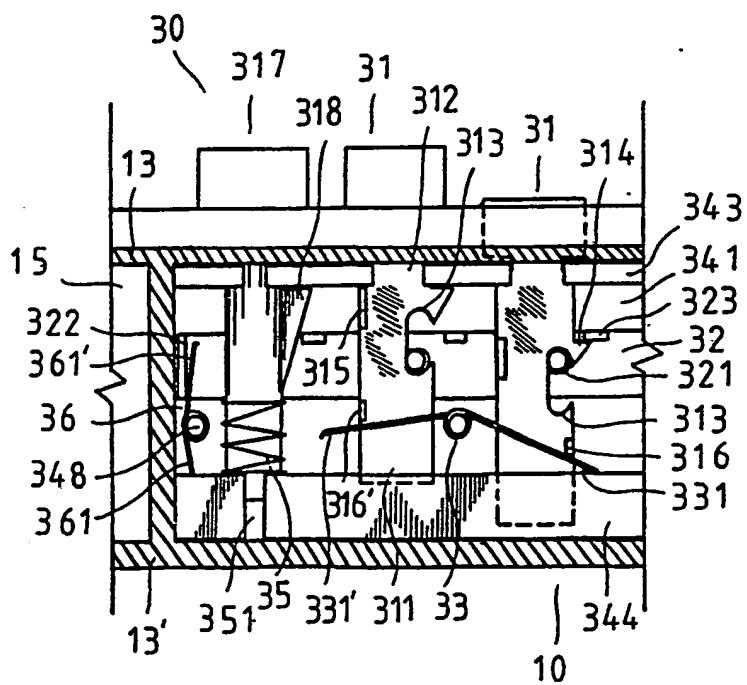
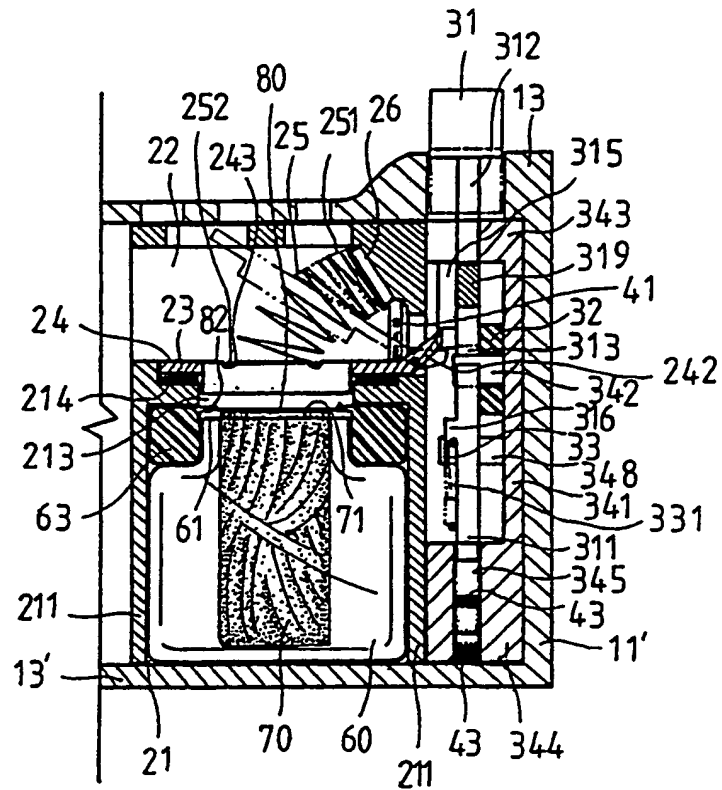
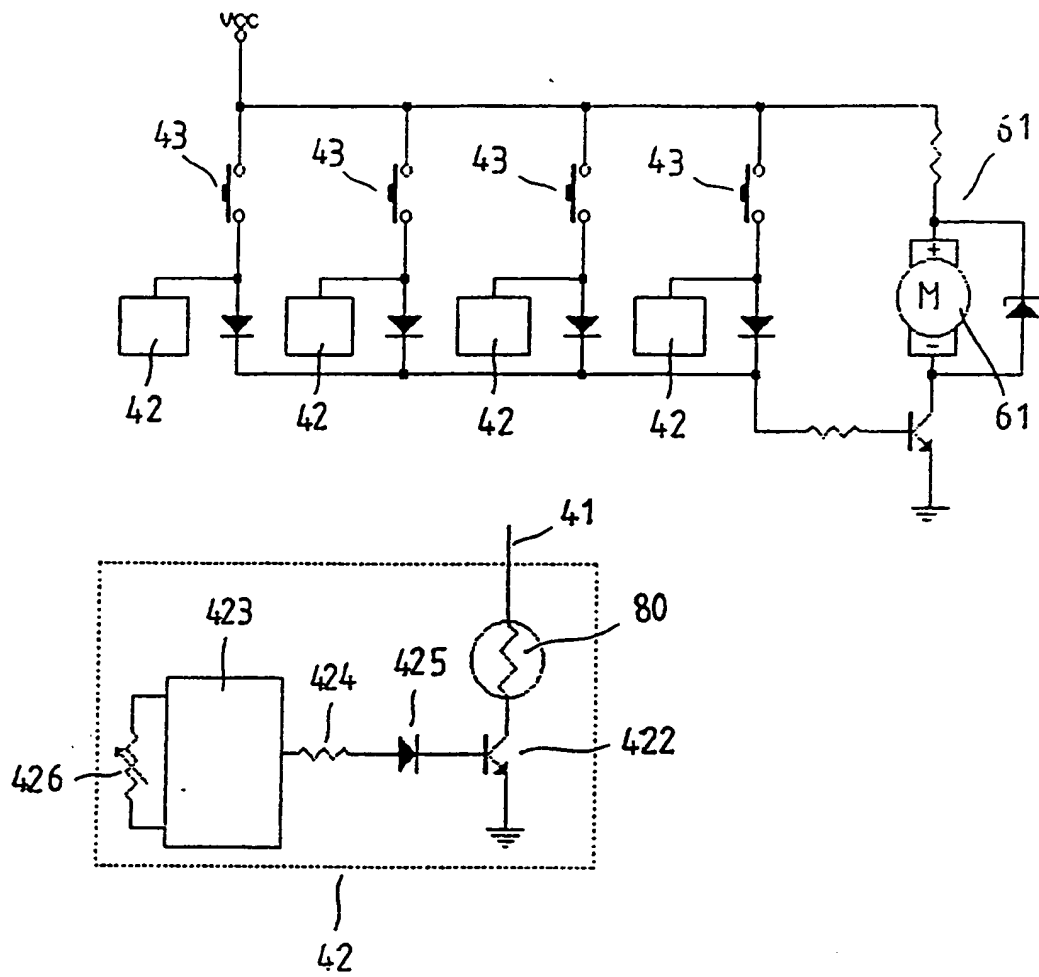


FIG. 3



**FIG. 4**



**FIG. 5**

## A DEVICE FOR SELECTIVELY GENERATING PERFUME GAS

### BACKGROUND OF THE INVENTION

The present invention relates to a perfume gas generating device, and more particularly to a device which selectively forms a high temperature area above a predetermined surface for creating perfume gas and releasing the same to external environment.

It is known that an odor agent or odor plate is widely used in a car or a room for creating desired odor. The odor plate is heated by an odor generating device to dissipate gas to the ambient environment. Such device includes a seat portion for placing the odor plate thereon. The seat portion has a power socket and an interior space for receiving a heating plate or a resistor. In general, the heating plate or resistor can conduct the heat to the odor plate for creating gas.

Another type of perfume gas generating device includes a base having a power socket and a heating mechanism disposed in the base. Usually, the heating mechanism includes a heating plate member. In such device, a container containing the perfume is allowed to be placed on a table of the base for receiving the heat conducted from the heating

mechanism. In still another type of perfume gas generating device, the perfume is wrapped in a bag member formed with multiple holes, whereby when the perfume is heated, the perfume gas is able to escape through the holes.

It is known that in using the odor plate, the density of the gas dissipated from the odor plate is unstable. For example, in the preliminary stage of use, the odor plate will release high density gas to create heavy odor. Subsequently, the density of the released gas will apparently decrease and the smell will be unsatisfactory.

Also, the perfume of the above devices is totally alternately heated and cooled. This causes consumption of more thermal energy and deterioration of the quality of the perfume.

Moreover, the above devices fail to selectively generate desired perfume gases or adjust the releasing density or speed of the perfume gases.

#### SUMMARY OF THE INVENTION

It is therefore a primary object of the present invention to provide a device for selectively generating perfume gas, including a main body having an interior space which receives a container base having an internal space for

receiving perfume containers, a selecting system able to reciprocating within the interior space of the main body, a heating system for providing heat according to the movement of the selecting system, a blast member and motors for supplying power to the blast member. The selecting system selectively exerts a force on a cap member to release a hole of the internal space from sealing and selectively activates the heating system to form a high temperature area above a predetermined surface of a wick member of said perfume container, whereby different kinds of perfume gases are freely selectively and changeably generated and released to external environment.

The present invention can best understood through the following description and accompanying drawings, wherein:

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective exploded view of the present invention, showing that the main body thereof is integrally formed for receiving container base, heating system, selecting system and blast member;

Fig. 2 is a sectional view, wherein the solid lines show that the reciprocating assembly is located at its original position and the phantom lines show that the reciprocating assembly moves in a downward direction;

Fig. 3 is a sectional view according to Fig. 2, showing



that when the reciprocating assembly reaches the end of the travel, the tracing guide board locks the reciprocating assembly;

Fig. 4 is a sectional view showing that the container base is operated in cooperation with the selecting system and when the reciprocating assembly moves in the downward direction, the cap member is forced to release the hole of the base from sealing and the switch of the heating system is pressed down to activate the heat controlling circuit thereof; and

Fig. 5 is a circuit diagram of the heating system of the present invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please refer to Fig. 1. The device for selectively generating perfume gas of the present invention includes a main body 10 having an interior space defined by two opposite end walls 11, 11', two opposite lateral walls 12, 12' and two opposite end faces 13, 13'. The interior space is divided by a partitioning board 14 into at least a first chamber 15 and a second chamber 16 which receive a container base 20, a selecting system 30 able to reciprocating within the first chamber 15, a heating system 40 for providing heat according to the movement of the selecting system 30, a blast member 50 and motors 90 for supplying power to the blast member 50. In a typical embodiment of this invention,

the blast member 50 has two axially projecting support ends 51 pivoted in the second chamber 16. The support ends 51 are driven by the motors 90 to drive the generated perfume gas to flow from the first chamber 15 into the second chamber 16 and escape from exits 111 of the end wall 11 of the main body 10 into external environment.

Please now refer to Figs. 1 and 2. The selecting system 30 includes a reciprocating assembly 31, a tracing guide board 32 which moves according to the displacement of the reciprocating assembly 31, resilient members 33 for keeping the reciprocating assembly 31 at its original position, and an accommodating means 34 for keeping the above elements 31, 32, 33 in the first chamber 15. In one embodiment of this invention, the accommodating means 34 is disposed in the first chamber 15 on inner face of the end wall 11', having an abdomen portion 341 including stakes 342 for retaining the tracing guide board 32. As shown in Figs. 1 and 2. The stakes 342 perpendicularly project from the abdomen portion 341 and pass through slots 321 of the tracing guide board 32. Furthermore, the accommodating means 34 includes a supporting portion 343 and a receiving portion 344 respectively located on upper and lower sides of the abdomen portion 341 for holding the reciprocating assembly 31. Detailedly, the receiving portion 344 is a hollow casing having receptacles 345, whereby end portions 311 of the reciprocating assembly 31 are able to go into the receiving

portion 344 to activate the heating system 40. In addition, the supporting portion 343 is formed with openings 346 corresponding to the receptacles 345. The opening 346 has a narrowed front end and shoulders 347. The openings 346 permit neck portions 312 of the reciprocating assembly 31 to pass therethrough while the shoulders 347 restrict the neck portions 312 as shown by solid lines of Fig. 2.

In a preferred embodiment of the present invention, the reciprocating assembly 31 has guide cuts 313, whereby the reciprocating assembly 31 can go through the openings 346 while escaping from the stakes 342 and whereby the stakes 342 serve to guide and limit the reciprocating assembly 31 during the reciprocating movement thereof. An arm 314 having a slant surface 319 and a stopper 315 are disposed under the neck portion 312 and respectively project in X axis direction and Z axis direction. Projecting plates 316, 316' are disposed on lateral sides of the reciprocating assembly 31 under the guide cuts 313 for providing supporting points for two ends 331, 331' of resilient members 33. Pins 348 are further disposed on the abdomen portion 341 of the accommodating means 34 for fitting with the resilient members 33, whereby the two ends 331, 331' thereof can push up the projecting plates 316, 316', making the reciprocating assembly 31 located at its original position. It is shown in Figs. 1 and 2 that two adjacent projecting plates 316, 316' are oppositely disposed to

cooperate with the two ends 331. 331' of the resilient members 33. Moreover, preferably the selecting system 30 includes a reciprocating switch 317 having a ridge portion 318. The switch 317 is rod-shaped and fitted with a spring member 35 to be received in holes 351, 352 of the receiving portion 344 and supporting portion 343.

A resilient guide member 36 is disposed on an innermost pin 348 of the abdomen portion 341. One end 361 of the resilient guide member 36 is fixed at the receiving portion 344 while the other end 361' thereof is biased against inner surface of a driving board 322 formed at an end of the tracing guide board 32, making the same naturally move left.

Please now refer to Figs. 1 and 4. The container base 20 includes separated internal spaces 21 for receiving containers 60 of perfume solvent, and rooms 22 disposed above and corresponding to the the internal spaces 21. The internal spaces 21 are defined by lateral walls 211 and end walls 212, having holes 213 formed on the end walls 212 for communicating the internal spaces 21 with the rooms 22. In a preferred embodiment of this invention, a ring plug 23 is disposed on a shoulder 214 of the hole 213 for creating airtight effect. A cap member 24 is used to seal the hole 213, having one side 241 pivoted on the lateral wall 211, and a lug 242 extending outside the room 22. It is shown in Fig. 4 that the lug 242 is located under the stopper 315 of

the reciprocating assembly 31. A slant block 26 is formed at inner upper corner of the room 22, providing a fixing point for one end 251 of a downward pressing means 25. The other end 252 of the downward pressing means 25 is pressed into an annular groove 243 of the cap member 24, making the cap member 24 seal the hole 213.

The container 60 is a glass-made bottle or the like, including a mouth 61 corresponding to the hole 213, a fiber-made wick member 70 extending from a bottom 62 of the container 60 to the mouth 61 thereof to provide an upward moving ( capillarity ) path of the perfume solvent contained in the container 60, and a connecting member 63 fitted with the mouth 61 by thread, tenon/mortise or frictional force, etc. A support member 82 is disposed on a top surface 631 of the connecting member 63 and a heating wire 80 is wound on the support member 82 for several loops and connected with a conductive member 81 perpendicularly disposed on the connecting member 63. In principle, the heating wire 80 contacts with a predetermined surface 71 of the wick member 70. It is shown in Fig. 4 that when the container 60 is received in the internal space 21, the conductive member 81 goes through the end wall 212 to connect with a heating mechanism 41 disposed in the room 22 for receiving the heat from the heating system 40.

Please now refer to Fig. 5. The heating system 40 includes

a heat controlling circuit 42 for conducting heat to the heating mechanism 41. The heat controlling circuit 42 includes a transistor 422, a switch 43 which can be a solenoid, connected between the transistor 422 and the heating mechanism 41 and disposed in the receiving portion 344 of the accommodating means 34, a current-limiting resistor 424, a diode 425, and an oscillating circuit 423 having a variable resistor 426. The heating mechanism 41 is connected with a power source end 421 and the collector of the transistor 422 and controlled by the switch 43. Normally, the heating mechanism 41 is powered off. The oscillating circuit 423 is connected with the base of the transistor 422 through the current-limiting resistor 424 and diode 425 for controlling heating frequency of the heating wire 80 of the heating mechanism 41. When the controlling circuit 42 is powered on, the oscillating circuit 423 creates oscillating signal and the variable resistor 426 controls the oscillating frequency thereof. By means of the current-limiting resistor 424 and the diode 425 for half wave rectification, the oscillating signal is limited in positive half wave to bias the base of the transistor 422 and create a current for heating the heating mechanism 41. The accommodation of the variable resistor 426 is accomplished by an adjusting member 90 disposed on the end wall 13 of the main body. Therefore, the higher the frequency is, the higher the temperature of the heating mechanism 41 is, whereby the temperature can be controlled

according to various vaporizing temperature of different perfume solvents so as to control the vaporizing speed thereof. Apparently, the heat controlling circuit 42 and other circuits can be arranged on the walls 11, 11', 12, 12', 13 or 13'. Fig. 5 shows the parallel pattern of the respective heating systems and heat controlling circuits 42. A controlling circuit 91 of the motor 90 for driving the blast member 50 can be connected with the heat controlling circuit 42, whereby when the switch 43 is closed, the blast member 50 is rotated.

The solid lines of Fig. 2 show that the reciprocating assembly 31 of the selecting system 30 is located at its original position. When the reciprocating assembly 31 is pressed to reciprocate, the slant surfaces 319 of the arms 314 will gradually push driven portions 323 perpendicularly formed on upper edge of the tracing guide board 32 to drive the tracing guide board 32 to move right as shown by phantom lines of Fig. 2. Please refer to Fig. 3, when the reciprocating assembly 31 reaches the end of the travel, the arms 314 pass over the driven portions 323 and the resilient guide member 36 restores the tracing guide board 32 to lock the reciprocating assembly 31. This is also shown in Fig. 4. When the reciprocating assembly 31 goes toward the end of the travel, the ends 311 thereof will contact with the switch 43 of the heating system 40 to close the circuit and activate the heat controlling circuit 42 so as to conduct

heat through the heating mechanism 41 to the heating wire 80, forming a high temperature area above the predetermined surface 71 of the wick member 70. The perfume solvent on the surface 71 will then be quickly vaporized into gas which is driven by the blast member 50 from the first chamber 15 into the second chamber 16 and then escapes from the exits 111 to external environment. Because the high temperature area established by the heating system 40 is accurately limited on the predetermined surface 71 of the wick member 70, the perfume is prevented from being totally alternately heated and cooled as occurring in conventional devices and thus the deterioration of the quality of the perfume is avoided. Also, it should be noted that the resistance of the perfume is 3.9 MK high so that a short circuit will not happen due to the contact between the heating wire 80 with 10-200 resistance and the wetted wick member 70.

When the user makes his/her second selection, the user makes the second reciprocating assembly 31' reciprocate. When the arm 314' of the reciprocating assembly 31' pushes right the tracing guide board 32, the first reciprocating assembly 31 is disengaged from the driven portion 323. Therefore, the reciprocating assembly 31 is restored to its original position by the resilient member 33. Of course, when the second reciprocating assembly 31' reaches the end of the travel, a corresponding heating system 40 will conduct heat to the predetermined surface 71 of the wick member 70 of



another container 60 to create another kind of perfume gas.

The selecting system 30 permits the user to press two or more reciprocating assemblies at the same time. Similarly, the tracing guide board 32 will move right and the resilient guide member 36 will lock the arm 314 to activate corresponding two or more heating systems 40 so as to conduct heat to the predetermined surfaces 71. The generated various kinds of perfume gases will be driven by the blast member 50 to form a mixture and escape outside. Also, the user can adjust the variable resistor 426 of the oscillating circuit 423 by means of the adjusting member 90 for controlling the heating system 40, making the wick members 70 release gases with different densities. This means that the user can obtain a desired perfume gas by means of adjustment and assembly.

Please now refer to Figs. 1 and 2. The switch 317 of the selecting system 30 has a length greater than that of the reciprocating assembly 31. Therefore, the switch 317 extends into the hole 351 of the receiving portion 344 by a greater length. This means that the travel of the switch 317 is shorter than that of the reciprocating assembly 31. In principle, the inclined angle of the ridge 318 of the switch 317 can be slightly larger than that of the slant surface 319 of the arm 314 of the reciprocating assembly 31. Accordingly, when the switch 317 is pressed downward, the

same pushes the tracing guide board 32 to release the driven portion 323 thereof from engagement, making the respective reciprocating assemblies 31 move back to their original positions. However, the ridge 318 will not move over the driving portion 323 of the tracing guide board 32. At this time, the switch 43 of the heat controlling circuit 42 in the receiving portion 344 are opened due to the disengagement of the reciprocating assembly 31 so that the heating wire 80 cannot receive any heat. Also, the restoring of the reciprocating assembly 31 will make the pressing means 25 release accumulated energy and thus make the cap member 24 again seal the hole 213 to avoid volatilization of the perfume solvent contained in the container 60.

In the preferred embodiment of this invention, the container base 20 has four internal spaces 21 for receiving four containers 60 containing four different kinds of perfume solvents. Correspondingly, the same number of reciprocating assemblies 31 and heating systems 40 are provided for controlling the generation of perfume gases. However, it should be noted that the number of these elements can be increased or decreased to achieve the same effect.

In conclusion, the present invention permits a user to select desired perfumes and controllably adjust the released speed of density thereof. These functions are not seen in

any conventional devices.

It should be noted that the above embodiments are only examples of the present invention and any variation thereof should fall within the scope of the present invention.

WHAT IS CLAIMED IS:

1. A device for selectively generating perfume gas, comprising a main body which has walls and an interior space defined by said walls, a blast member received in said interior space, and a motor for driving said blast member, said device being characterized in that:

said interior space of said main body is divided into a first chamber and a second chamber;

a container base is removably disposed in said first chamber, including more than one internal space having a hole and a cap member for sealing said hole;

more than one perfume container is received in said internal space, having a mouth and a fiber-made wick member extending from a bottom of said container to said mouth, said wick member having a predetermined surface protruding beyond said mouth;

a selecting system is disposed in said first chamber and reciprocates therewithin, said selecting system exerting a force on said cap member in a first moving direction to release said hole from sealing; and a heating is disposed in said main body, including a heating mechanism forming a high temperature area above said predetermined surface and a heat controlling circuit for conducting heat to said heating mechanism, said heat controlling circuit including a switch connected between said heating mechanism and said heat controlling circuit, said selecting system being able to close said switch in said first moving direction.

2. A device as claimed in claim 1, wherein said selecting system comprises:

more than one reciprocating assembly, including a stopper portion and an arm portion on two sides;

a tracing guide board which moves according to the movement of said reciprocating assembly, including a driven portion corresponding to said reciprocating assembly for locking said arm portion thereof after said reciprocating assembly moves in said first direction, and a driving board formed at an end of said tracing guide board;

at least one resilient member having two ends respectively abutting against two adjacent reciprocating assemblies for

making said reciprocating assemblies located at their original positions; and

an accommodating means for keeping said reciprocating assembly in said first chamber, said accommodating means including an abdomen portion for retaining said tracing guide board and a supporting portion and a receiving portion respectively disposed on upper and lower sides of said abdomen portion for holding said reciprocating assembly.

3. A device as claimed in claim 1, wherein said heat controlling circuit further includes:

a transistor connected with said heating mechanism;

a diode and a current-limiting resistor connected with said transistor; and

an oscillating circuit having a variable resistor, said oscillating circuit being connected with said transistor through said current-limiting resistor and diode.

4. A device as claimed in claim 1, wherein said container base further includes:

at least one room disposed above and corresponding to said internal space, said room having a slant block; and

a downward pressing means having a first end fixed on said slant block and a second end pressed against a surface of said cap member for making said cap member seal said hole.

5. A device as claimed in claim 1, wherein said accommodating means further includes:

at least one stake perpendicularly projecting from said abdomen and passing through a slot formed on said tracing guide board, and at least one pin for fitting with said resilient member;

at least one opening formed on said supporting portion, having a narrowed front end and shoulders; and

at least one receptacle formed on said receiving portion corresponding to said opening, said switch of said heating system being disposed on a bottom of said receptacle.

6. A device as claimed in claim 1 or 2, wherein said selecting system further includes a reciprocating switch having a ridge portion, said reciprocating switch being fitted with a spring member and received in two holes respectively formed on said receiving portion and supporting portion.

7. A device as claimed in claim 1 or 2, wherein said reciprocating assembly includes a guide cut and a projecting plate disposed under said guide cut.

8. A device as claimed in claim 1 or 2, wherein a resilient guide member is disposed on an innermost side of said abdomen portion of said accommodating means, said resilient guide member having a first end fixed on said receiving portion and a second end biased against inner surface of said driving board of said tracing guide board.

9. A device as claimed in claim 1 or 4, wherein said container includes a connecting member associated with said mouth thereof, said connecting member having a support member, a heating wire being wound on said support member for several loops to contact with said predetermined surface of said wick member, and a conductive member perpendicularly disposed on said connecting member and connected with said heating wire, whereby when said container is received in said internal space, said conductive member passes through an end wall of said internal space to connect with said heating mechanism disposed in said room.

10. A device as claimed in claim 1 or 4, wherein said hole of said internal space has inner shoulder portions for positioning a ring plug thereon.



11. A device as claimed in claim 1..2 or 4, wherein said cap member has a side pivoted on a wall of said room, an annular groove disposed on a surface of said cap member, and a lug portion, whereby when said reciprocating assembly moves in said first direction, said lug portion is pressed by said reciprocating assembly.
12. A device as claimed in claim 1 or 3, wherein an adjusting means is disposed on a wall of said main body for adjusting said variable resistor of said heat controlling circuit.
13. A device as claimed in claim 1 or 3, wherein said heat controlling circuit is arranged in parallel pattern and connected with controlling circuit of said motor.
14. A device as claimed in claim 1, wherein at least one gas exit is disposed on a wall of said main body.
15. A device as claimed in claim 1, wherein said switch of said heat controlling circuit is normally opened.

Relevant Technical Fields

(i) UK Cl (Ed.M) A5G (GV)

(ii) Int Cl (Ed.5) A61L 9/03

Search Examiner  
 J F JENKINS

Date of completion of Search  
 10 AUGUST 1994

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE DATABASE: WPI

Documents considered relevant following a search in respect of Claims :-  
 1 TO 15

Categories of documents

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| <p><b>X:</b> Document indicating lack of novelty or of inventive step.</p> <p><b>Y:</b> Document indicating lack of inventive step if combined with one or more other documents of the same category.</p> <p><b>A:</b> Document indicating technological background and/or state of the art.</p> | <p><b>P:</b> Document published on or after the declared priority date but before the filing date of the present application.</p> <p><b>E:</b> Patent document published on or after, but with priority date earlier than, the filing date of the present application.</p> <p><b>&amp;:</b> Member of the same patent family; corresponding document.</p> |
|--|---|

Category	Identity of document and relevant passages	Relevant to claim(s)
A	GB 2247623 A (SECTO) see Figure 5	
A	US 4603030 (McCARTHY) see Figure 3, column 1 lines 4-19 and 41-68 and column 4 lines 17-22	